

ATARI

CX5200™ RETAIL DEMONSTRATOR®

FIELD SERVICE MANUAL

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INTRODUCTION

The C33200 Retail Demonstrator Field Service Manual is a reference guide for you, the service technicians. It is designed to enable you to repair and maintain the retail demonstrator. This manual is to be used in conjunction with the C33200 Field Service Manual (FDS/G4.27 Rev. 02).

This manual is organized in eight sections.

- **Theory of Operation** - Overview of how the retail demonstrator works.
- **Schematics & Blockdiagrams** - Electrical drawings of the retail demonstrator.
- **Testing Procedures** - Procedures for determining if the retail demonstrator is functioning properly.
- **Fault Isolation** - Procedures for determining which assembly in the retail demonstrator is defective.
- **Disassembly/Assembly Procedures** - Procedures for accessing the various assemblies of the retail demonstrator.
- **Repair Procedures** - Procedures to follow once the defective assembly has been determined.
- **Parts List** - Breakdown of part numbers used in the retail demonstrator.
- **Service Bulletins** - Section to be used to hold all Field Change Orders, Upgrade Bulletins and Tech Tips.

SECTION 1

THEORY OF OPERATION

Overview

The Atari CX3200 Retail Demonstrator is a free-standing unit which includes a built-in television monitor, a shelf which displays the Model 5900 console, a control panel, a coin slot, and a cabinet containing the Video Module (which allows for interaction between the game and the player(s)).

Figure 1-1 is a Functional Block Diagram of the CX3200 Retail Demonstrator.

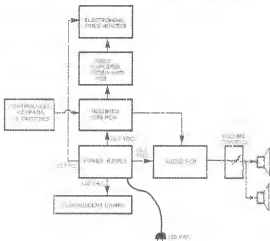


Figure 1-1. CX3200 Retail Demonstrator Functional Block Diagram

SECTION 2

SCHEMATICS AND SILKSCREENS

On the following pages are representative silkscreens and schematics for the CX5200 Retail Demonstrator. Minor variations in design may be encountered depending on the production date of the unit, but these schematics provide all details required for an in-depth understanding of all CX5200 Retail Demonstrator units.

NOTE: THE SCHEMATIC FOR THE CX5200 PC BOARD MINUS THE VIDEO AMP BOARD IS IN THE CX5200 FIELD SERVICE MANUAL (PART NUMBER F0146927 REV. 02).

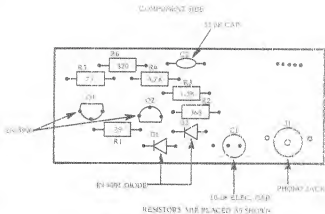


Figure 2-6 Texas Instruments PC Board 555N

SECTION 3

TESTING PROCEDURES

Equipment Needed:

You need the following items to analyze which CX1000 Retail Demonstrator Assembly is defective:

- 1 Volt/Ohm meter
- 1 RF Modulator TV/monitor Adapter (Part Number FA1001795 included in kit)
- 1 color TV set (properly adjusted)
- 1 V.I. Diagnostic cartridge
- 1 GalaxianTM figure cartridge (supplied with Retail Demonstrator)

INITIALIZATION PROCEDURE

Before you begin troubleshooting the retail demonstrator, be sure that the wires of the volume-control knob top shell (pins) are in the correct locations. The orange wire and the brown wire must be connected as shown in Figure 3-1 (correct location).

To switch the wires, depressor them and put them in the correct location.

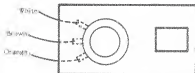


Figure 3-1. Volume Control Knob Wiring (Correct Location)

SECTION 3

DISASSEMBLY/ASSEMBLY PROCEDURE

Special Equipment Needed:

- Phillips rapid screwdriver
- 1/8" Hex. wrench
- 1/32" Hex. wrench
- 3/32" Hex. wrench
- Small flat blade screwdriver
- 11/32" Nut driver (not more than 1 1/2" in length)
- Soldering iron and solder

NOTE: Be sure unit is unplugged before disassembling to any level.

Disassembly

Use Figure 4-1 as reference for Disassembly/Assembly procedures.

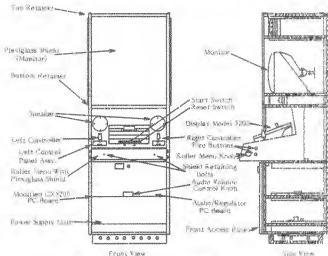


Figure 4-1. CX200 Paralle Demonstration Adapter.

4. Remove the ground wire and disconnect the power harness and input signal harness from the monitor.
5. Carefully remove the monitor assembly from the retail demonstration.

To remove the Control Panel Assembly:

1. Use a 1/32" hex wrench to remove the two upper screws from the plastic plexiglass shield which covers the roller menu.
2. Use a small flat blade screwdriver to position one of the roller mechanisms.
3. Loosen the four Phillips head screws on the roller menu (two beside each knob).
4. While supporting the roller menu, slide one shaft out.
5. Disconnect the wiring harness from the controller assembly.
6. Use an 11/32" nut driver to remove the plastic shield, hold the control panel assembly to the console.
7. Carefully lift out the assembly.

To remove the Switches:

1. Follow steps 1 through 4 of the previous procedure to remove the roller menu.
2. Disconnect the slide-on connectors on the detecting switch.
3. Remove the large nut on the back side of the switch assembly.
4. Remove the switch assembly.

ASSEMBLY:

To replace the modified Model GX3250 PC Board, the Audio PC Board or the Power Supply Unit:

1. Align the four screw holes to position the module.
2. Insert and tighten the four Phillips head screws and stand-offs (if applicable) which attach the module to the retail demonstration.
3. Connect the wiring harnesses.

NOTE: THE RF CABLE IS SOLDERED TO THE MONOPRIED GX3250 PC BOARD AND MUST BE CONNECTED TO THE MONITOR. SEE INSTRUCTIONS BELOW TO ACCESS THE MONITOR.

4. Replace the front access panel on the retail demonstration.

Reinstall the Switch

1. Place the switch assembly over the hole in the metal demonstration. Pushen the assembly with the button on the outside of the demonstration and the coil spring assembly on the inside.
2. Insert the threaded shaft to the button through the hole in the left spring assembly.
3. Insert and tighten the large nut on the back of the switch assembly.
4. Connect the slide-on connectors.
5. Refer to the previous procedure to replace the roller mass.

SECTION 3

FAULT ISOLATION PROCEDURES

This section enables you to determine which assembly in the CX3200 Retail Demonstrator is defective.

Equipment needed

- a VCR/Cable converter
- an RF modulator TV/Monitor Adapter
- a TV Set, properly adjusted

To begin the Fault Isolation Procedures, find your unit's symptom in Table 3-1, Unit Symptoms/Flowchart Entry Point, Page 3-1. Table 3-1 will send you to the page and flowchart to use to troubleshoot the unit.

TO USE THE FLOWCHARTS

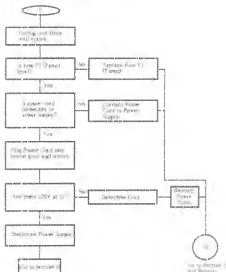
Follow the prompts in the order presented in the flowchart. When a question is asked, follow the line from the box that best applies to your unit's condition. When that line terminates with a letter inside a circle, turn to the page referenced next to the circle, locate the letter and continue the diagnosis. The flowchart leaves nothing to chance. It tells you when to perform a specific test and when to replace components.

When the flowcharts call an assembly or board defective, follow procedures in Section 4 for disposition of the defective board and Section 5 for instructions to replace it.

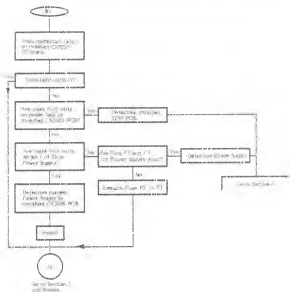
If you have any problem, call the toll-free Asac Repair Number:

Inside California
(800) 475-1466

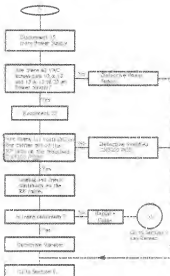
Outside California
(320) 536-1533



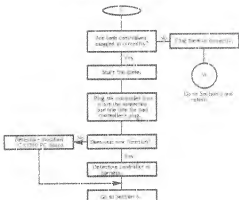
Power to Lights Bar Not as Specified (CX3250 PC Board/Centri)



NA: Diagnose With Audio



Reconnect an Overhaul Plugger



RF Modulator TV Monitor Adapter Procedures

The adapter is supplied to enable you to check whether the video portion of the modified CX1205 PC Board is functioning properly, thereby cutting down on hold time.

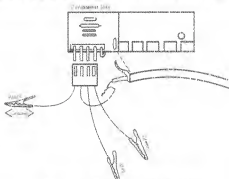


Figure 4-1. RF Modulator TV Monitor Adapter
Part Number PA100179

Connecting the Adapter

Refer to Figure 4-1, Page 4-8 for the following steps:

1. With power to the modified CX1205 PC Board OFF, connect the Red lead to the RCA jack side of RJ 4-7K on the video amp PC board.
2. Connect the Green lead to the positive side of R3 (opposite to the Red lead) on the video amp PC board.
3. Connect the Black lead to circuit ground (connect to the tab on the PCB shielding).
4. Connect the RCA plug on the end of the RF cable into a typical VHS/computer switchpoint.
5. Turn power to the modified CX1205 ON and select channel 2 on your television set.

NOTE: It may be necessary to tune your adapter for best reception. This will have no effect on the modified CX1205 PC board since it does not use RF when in the function tester.

HOW TO CHANGE A LEFT CONTROLLER TO A RIGHT HAND CONTROLLER

Purpose: This procedure is used to change a left controller into a right controller to replace a defective right controller.

The following steps describe how to change the positioning of the potentiometer and the potentiometer to allow sufficient cabinet clearance to operate the controller. Step 6 describes which wires to swap so that pots operate correctly in the new position.

Use Figure 6-1 as reference for the following steps:

Procedure:

1. Lay the new (left) controller face down.
2. Cut the two old straps which hold the cables onto the base plate.
3. Unplug the keyboard connector (Note the polarity).
4. Remove the four screws which hold the pot assembly to the base plate.
5. Lift and turn the pot assembly 90 degrees to the right (left/right pot now becomes up/down pot and vice versa).
6. Replace the four screws which hold the pot assembly to the base.
7. Swap some of the wires on the two pots to conform to the new directions and operate on the left/right pot become up/down pot. See detail figure 6-1 for proper wire locations if wires will have to be swapped: the yellow, the orange and the black.
8. Plug in the keyboard connector. Make sure polarity is correct (See detail, Figure 6-1).
9. Secure the wiring to the base plate by the straps.
10. Remove the defective controller from the retail demonstrator and insert the new one using instructions on pages 6-2 and 6-4.
11. After assembly, check pot arm alignment using page 6-3.

CONTROLLER POTENTIOMETER CALIBRATION

There are two methods available for calibrating the controller potentiometers:

- Using the J-1 Diagnostic Cartridge and the CX5200 Retail Demonstrator
- Using an Ohmmeter

Potentiometer Calibration Using the J-1 Diagnostic Cartridge and the Retail Demonstrator

1. Insert the J-1 Diagnostic Cartridge into the socket on the rear of the CX5200 PC Board.
2. Manually select the Potency Adjust test by pressing 5 on the test controller and then the START Button.
3. Move the joystick as far to the left as possible then as far to the right as possible. Observe the values on the screen. When the joystick is moved to the left, the value range should be between 10 and 20. When the joystick is moved to the right, the value range should be between 230 and 240 (over-range).
4. To obtain the correct value ranges, loosen the pot retaining nut and adjust the pot.
5. Repeat for up/down positions.

Potentiometer Calibration using an Ohmmeter

1. Connect an ohmmeter across the wiper and the common wire of the potentiometer.
2. With the joystick nearly centered, the meter should read 275K ohms \pm 25K ohms.
3. If you do not obtain a 275K ohm reading:
 - Loosen the pot retaining nut.
 - While holding the joystick in the center position, rotate the pot housing to obtain a reading of 275K ohms.
 - Tighten the pot retaining nut.
4. While observing the meter, move the joystick as far to the left as possible, then as far to the right as possible. The range should be no more than 90K ohms when the joystick is moved to the left and at least 450K ohms when the joystick is moved to the right.

SECTION 7

ATARI CX3200 RETAIL DEMONSTRATOR

PARTS LIST

MAJOR ASSEMBLIES

LOCATION	DESCRIPTION	PART NUMBER
	CX3200 PC BOARD ASSY (modified)	CA030129
	TOP HOUSING ASSY	CA018175-01
	BASE ASSY	CA018176-01
	VIDEO AMP PC BOARD	CA029270
	REGULATOR/AUDIO PC BOARD ASSY	A039415-02
	POWER SUPPLY ASSY	A037671-03
	CONTROL PANEL (LEFT)	A039173-01
	CABINET (FINAL ASSY)	A0399130-01
	RF MODULATOR TV/MONITOR ADAPTOR	TA100179

	CX3200 PC BOARD ASSY (modified)	CA030129
C1,2,3,2,3,15-17, 21,23-28,35,47,60, 73,80	Cap. Ceramic Axial .1uF (50V)	C034155-03
C3,5,6,12,18,22, 36,49,50	Cap. Ceramic Axial .5uF (50V)	C034155-05
C7	Cap. Ceramic Axial .001uF (50V)	C034155-07
C10,31,35,35	Cap. Ceramic Axial 57pF (50V)	C034179-03
C11,20	Cap. Ceramic Axial .01uF (50V)	C034179-05
C13,14	Cap. Polyester .220 uF (25V)	C034155-01
C19,29-306	Cap. Polyester Radial .047uF (50V)	C034155-09
C30,32	Cap. Ceramic Axial .05uF (50V)	C034179-12
C33	Cap. Ceramic Axial .02uF (50V)	C034179-01
C37,43,40,35,51-54, 91-95,107-110,128,136, 138-139	Cap. Ceramic Axial .001uF (50V)	C034180-12
C41,42,119,114	Cap. Tantalum Axial .01uF (25V)	C041514
C43,59	Cap. Polyester Radial .002uF (150V)	C034155-19
C47	Cap. Elec Radial 4700 uF (25V)	C034155-17
C49-59,61-62,79-83, 87-90,91,112-119	Cap. Ceramic Axial .475uF (50V)	C034179-16
C151,117,118,105-122, 123,127,129,135,136	Cap. Ceramic Axial .01uF (50V)	C034181-08

LOCATION	DESCRIPTION	PART NUMBER
U1	IC CD00108 (HEX CMOS Buffer)	CD00181A
U2	IC 4102 (Modified)	CD00480V
U3	IC ANTIC	CD007296
U3A,B	IC T4L5244	CD004371
U3	IC GT1A	CD00480V
U4	IC T4L5128N	CD008032
U7	IC 30K8V	CD002294
U8	IC ROM OS	CD009196
U9A-D	IC 4052 (Analog Multiplexer)	CD004930
U10A,28	IC T4L510	CD002009
U10A,17	IC T4L5238N	CD008032
U13A-D	IC ROM (26K X 10 Signal Supply)	CD008062
U27	IC T4L500	CD004391
U29	IC 40138 (Dual Type D Flip Flop)	CD004934
CR1-4	Diode 1N914	3N-1N914
Q1A,B,C,D,E	Transistor 2N3904	3N-2N3904
Q2A,B-C,D,E,F,G	Transistor 2N3904	3N-2N3904
Q3	Transistor 3A-2N3904	3N-2N3904
Q4	Transistor M18210	CD000916
Y1 (Alternate Listed)	Crystal 4.579575 Mhz (HC-49)	CD002070
Y1 (Alternate for PAN-CD005109)	Crystal 4.579575 Mhz	CD002077
L1	Inductor Variable 10,05-1,2uH	CD008827
L2	Inductor Axial 20H	CD008822
L3	Inductor Axial 4.7-uH	CD004804
L4	Inductor Axial 22uH	CD004802
L5,L11-L16,L18	Inductor Polyester Bead	CD004804
Q5	LED	CD004776
Q6 (Part 40)	LED Snapoff	CD004776
VR1A (Theft off)	Voltage Regulator 7805 (5V/1.5A)	CD004804
S1	Switch Slide Channel Select	CD004804
S2	Switch Momentary Push Button	CD004804-01
U1	Connector (Cartridge PC Board Mount) (18/26)	CD008061
U2	Connector (Penny Jack)	CD008064
Port 1-4	Connector (12 pin)	CD008063
X1,6,8-13,16-25	Jacket IC (16 pin)	CD004804-01
X2,3,5,7	Jacket IC (40 pin)	CD004804-02
X9,17	Jacket IC (20 pin)	CD004804-01